RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Log Event A

Borehole 41-11-06

Borehole Information

Farm : SX | Tank : SX-111 | Site Number : 299-W23-93
N-Coord : 35,194 | W-Coord : 75,767 | TOC Elevation : 662.52
Water Level, ft : | Date Drilled : 3/31/1962

Casing Record

Type : Steel-welded | Thickness : 0.280 | ID, in. : 6
Top Depth, ft. : 0 | Bottom Depth, ft. : 75

Equipment Information

Logging System : 2 | Detector Type : HPGe | Detector Efficiency: 35.0 %
Calibration Date : 03/1995 | Calibration Reference : GJPO-HAN-1

Logging Information

Log Run Number : 1 | Log Run Date : 7/13/1995 | Logging Engineer: Bob Spatz
Start Depth, ft.: 75.0 | Counting Time, sec.: 100 | L/R : L | Shield : N
Finish Depth, ft. : 0.0 | MSA Interval, ft. : 0.5 | Log Speed, ft/min.: n/a

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Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 11/10/1995

Analysis Notes :

Borehole 41-11-06 was logged in a single run in a move-stop-acquire mode that collected spectra for 100 seconds every 0.5 ft. The gain of the data-collection system was sufficiently stable to process the data with a single energy calibration.

Verification spectra collected before and after the run showed that the tool was operating correctly.

Correction factors for 0.25-in.-thick steel casing were used during data processing.

Cs-137 was the only man-made radionuclide identified in this borehole, occurring from the surface to about 20 ft and from 60 to 75 ft, with isolated occurrences near the minimum detection limit between these two intervals. The concentration in the upper zone was less than 10 pCi/g, the concentration in the lower zone was less than 30 pCi/g.

The K, U, and Th logs showed little character, except for a possible lithology change near the 61-ft depth .

For additional log data interpretation, see the discussion for this borehole included in the Tank Summary Data Reports for SX-111 and SX-114.

Log Plot Notes:

Three log plots are provided. The first one shows Cs-137 concentrations. The second one shows the naturally occurring radionuclides (K-40, U-238, and Th-232), which can be used for lithology interpretations. A combination plot includes logs of Cs-137, natural gamma, total gamma derived from the spectral data, and the latest available data from WHC Tank Farms gross gamma logging. No attempt has been made to adjust the gross gamma plot for depth discrepancies in the WHC gross gamma data. The headings of the Cs-137 and natural gamma plots identify the specific gamma rays used to calculate the concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detectable activity (MDA). The MDA of a radionuclide represents the lowest concentraton at which positive identification of a gamma-ray peak is statistically defensible. If the reported concentration is slightly above the MDA, the 95-percent confidence interval may extend below the MDA value.